CUMULATIVE INDEX 1993

Volume 11

March NUTRITION IN THE INTENSIVE CARE UNIT, pages 1-103

GASTROENTEROLOGY, pages 105-219

Iune CRITICAL CARE PHARMACOLOGY, pages 221-387 September COAGULOPATHY AND HEMATOLOGY, pages 389-568

December MANAGEMENT OF CHRONIC HEART FAILURE, pages 569-672

THORACIC TRAUMA, pages 673-773

Note: Page numbers of article titles are in boldface type

Abbokinase. See Urokinase (Abbokinase).

ABC. See Airway, breathing, circulation (ABC).

Abruptio placentae, 482-483

Absorption, drug, in adults, 229-231

in children, 367-368

Acetaminophen, 289, 291

Acetazolamide, for chronic heart failure, 584

Acid-base, in fulminant hepatic failure, 146

ACLS (Advanced Cardiac Life Support) guidelines, 247

Acute myocardial infarction (AMI), thrombolysis for,

alteplase in, 364-365

urokinase in, 360

Adult respiratory distress syndrome(ARDS), after bone

marrow transplantation, 538

pathophysiology of, complement activation in, 725-

macrophages in, 729

neutrophils in, 726

oxygen metabolites in, reactive, 726-727

pharmacotherapy for, 732

post-traumatic, **723–734** definition of, clinical, **725–727**

incidence of, 723-724

respiratory therapy for, extracorporeal membrane oxy-

genation/carbon dioxide removal in, 729-731

inhaled nitric oxide, 731

inverse ratio ventilation, 729-730

standard, 728-729

Advanced Cardiac Life Support (ACLS) Guidelines, 247

Aerosol therapy, in intubated patients, charting of, 279

complications of, 278

devices for, 273-27

limitations of, 274-277

response to, objective, 277-278

subjective, 278

with mechanical ventilation, 271-280

anti-infective, 271-272

bronchodilators in, 272

response to, 277-278

indications for, 271

nebulizer versus metered-dose inhaler for, 273-274

Afibrinogenemia, 451

AHG (antihemophilic globulin [AHG] deficiency). See Hemophilia(s), factor VIII deficiency.

AIDS. See HIV/AIDS

Airway, breathing, circulation (ABC), in blunt chest

trauma, 673-674 in penetrating chest injury, 689-690

Albumin, 8-9. See also Prealbumin.

Alcohol, pancreatitis from, acute, 186

Allopurinol, for inflammation and coagulopathies, 430

Alteplase (recombinant tissue plasminogen activator

[r-TPA]), dosage of, 364-365

in acute myocardial infarction, 364-365

in peripheral arterial occlusion, studies of, 362, 363

reconstitution of, 365

versus streptokinase and urokinase, 362, 364

AMI. See Acute myocardial infarction (AMI).

Amidate, See Etomidate (Amidate).

Aminoglycosides, in pediatric patient, 373-374

resistance to, 314-315

Ammonia, encephalopathy from, hepatic, 42

Amrinone, for chronic heart failure, 594

for congestive heart failure, acute, 264-265

Amylase, serum level, in pancreatitis, 189-190

Analgesia, 281-295

administration of, 289-290

epidural, 292-293 intramuscular, 290

intrathecal, 292-293

intravenous, continuous infusion, 292

intermittent injection in, 290-292

oral, 290

patient-controlled, 292

transdermal, 293

transmucosal, 293

adverse reactions to, 286-288

anesthetic, local, 283-285, 289, 291

dosage of, 289-291

drug interactions in, 288-289

epidural, in thoracic trauma, 717-718, 720

postesophagogastrectomy, 181

indications for, 283-284

intrathecal, 718

Analgesia (Continued) mechanisms and site of action of, 282-283 monopolizing of, 294 nonopioid, 282-291 opioid, 282-284, 289-291 patient-controlled, 719 pharmacokinetics of, 284-286 Anastomosis, leakage from, postesophagogastrectomy, posttransplantation, of small intestine, 210-211 Anectine. See Succinylcholine (Anectine). Anesthesia, head injury and, 703 in thoracic trauma, 697-711 agents for, 704-706 airway management and ventilation in, 697-699 cervical spine management and, 701, 703 extubation and, 707-708 induction of, rapid sequence, 699-701 intraoperative management of, 703-707 intubation for, 697-699 local, for pain management, 719 neuromuscular blockade and, 706-707 pharmacology and, 703-704 postoperative management of, 707-709 Anesthetic(s), fentanyl, for analgesia, 293 local, adverse reactions to, 288 dosage of, 291 drug interactions with, 289 in thoracic trauma, 719 indications for, 284 mechanism and sites of action of, 283 pharmacokinetics of, 285 Angina pectoris, in atherosclerosis, 356 Angiotensin-converting enzyme (ACE) inhibitors, actions of, 601-602 clinical uses of, 603-604 for chronic heart failure, 267, 584 patient outcomes and, 602-603 studies of, 602-603 Anorectal disease, HIV/AIDS-related, 124-125 Antacids, prophylactic, for stress ulceration, 167 Anthropometric measurements, 4, 6-7, 99 Antibiotic(s), 313--323 administration of, considerations in, 321-322 aminoglycoside, 314-315 beta-lactam, 315-318 broad-spectrum, vitamin K deficiency from, 456 for bacteremia, 320-321 for nosocomial infections, 313-314, 318-320 for urinary tract infections, 320 quinolone, 315 resistance to, bacterial, 313-314 Anticoagulant(s) heparin, 519-521 warfarin, 517-519 Anticoagulation, for heart disease, 511 for pulmonary thrombosis, 494 Anticonvulsant(s) barbiturates, 239 benzodiazepines, 238 lidocaine as, 239 paraldehyde, 239 phenytoin, 238-239 valproate, 239

valproic acid, 239

physician order for, 381

Antiendotoxin therapy. See also Immunotherapy; Shock,

HA-1A, pharmacy and therapeutics committee and, 380, 382

in sepsis, 345-354 case studies of, 349-352 protocol for, 354 history of, 347-349 monoclonal, 336, 348-350 polyclonal antiserum, 347-348 Antifibrinolytic agents(s), for coagulopathy, postoperative, 469-470 Antihemophilic globulin (AHG) deficiency. See Hemophilia(s), factor VIII deficiency. Antioxidants, for inflammation and coagulopathies, 430 Antithrombin III, activity of, 499-501 deficiency of, acquired, associated pathologies, 503in pregnancy, 505-506 mechanisms of, 503 neonatal, 506 hereditary, 501-503 classification of, 501-502 diagnosis of, 502-503 manifestation of, 502 treatment of, 503 molecule, 499-500 Antithrombin III (ATIII) concentrate, clinical studies of, for disseminated intravascular coagulation, 406 with heparin, for thrombosis, 506-507 Anti-TNF (antitumor necrosis factor), for septic shock. 238 Antitumor necrosis factor (anti-TNF), for septic shock, Aorta, disruption of, complications of, 683-684 from blunt chest injuries, 682-684 mortality from, 682 repair of, 682-683 penetrating injury to, 691-693 transection of, mortality from, 691 thoracotomy for, 691-692 Apoproteins, 436-437 Aprotinin, for coagulopathy, postoperative, 469-470 Arachidonic acid, metabolites of, in coagulation and inflammation, 418 ARDS. See Adult respiratory distress syndrome (ARDS). Arginine, immune response and, modulation of, 115-117 in enteral nutrition, 26 in refeeding, in hypermetabolism, 102 Arteriography, pulmonary, 492 Atherosclerosis. See also Thrombolysis. pathophysiology of, 355–356 Atracurium, 302–303 Atrial fibrillation, sudden cardiac death and, 611-612 Atropine, in resuscitation, 254, 257-258 Autonomy, patient, 19, 377

Bacteria, commensal, 110 in gut, 110, 113 translocation of, 24–25, 113, 212
Barbiturates, for intracranial pressure reduction, 242 for seizures, 239 in thoracic trauma, 706–707
Beneficence, 19, 377
Benzodiazepines, for seizures, 238 in thoracic trauma, 705–706, 709
Beta-adrenergic agonists, for chronic heart failure, 591 in combination therapy, 592–593 long-term use of, 593–594 tolerance to, 592
Beta blockers, for cerebral perfusion, 244

for chronic heart failure, actions of, 604-605 classification of, 605 clinical use of, 606 patient outcomes with, 605-606 for congestive heart failure, acute, 267 for portal hypertension, 159 Beta-lactam antibiotics, classification of, 317 examples of, 317 resistance to, 314-318 mechanisms in, 316-317 structures of, 316 trade names of, 318 Biliary tract disease, HIV/AIDS-related, 124 Bleeding, after bone marrow transplantation, 534-535 after implantation of ventricular assist devices, 656after thrombolytic and anticoagulant therapy, 365, 511-523 See also Thrombolysis; Anticoagulation. heparin-associated, 520 in hemophilia, 448-449 warfarin-associated, 517-519 Blood, antigens in, in group and typing, 544 clotting factors in, 454-455 components of, 544-550 physiology of, 543-544 Blood component replacement therapy, 543-556. See also Transfusion administration of, 554 assessment for, 552-553 components for, 544-550 evaluation of, 555 in disseminated intravascular coagulation, 405 monitoring of, 554-555 patient education for, 553 personnel coordination for, 553 procurement and identification for, 553-554 reactions to, 550-552 Blood vessels, abnormalities of, congenital coagulopathies from, 445-446 Blunt chest injury(ies), 673-686 assessment of, airway, breathing, circulation in, 673-674 fractures in, 674 laboratory, 675 radiologic, 675 cardiac output alterations in, 681 impaired gas exchange in, from pulmonary contusion, ineffective airway in, from tracheobronchial tears, 679-681 pericardial tamponade in, 681 tension pneumothorax from, 679 types of, aortic disruption, 682-684 cardiac contusion, 681 fractures, 676-678 pulmonary contusion, 676-678 tracheobronchial tears, 679-681 ventilation alterations in, from bony thorax fractures, 675-676 from pleural space injuries, 678-679 BMT. See Bone marrow transplantation (BMT). Bone

marrow transplantation (BMT), 531-542

allogeneic, 532, 535

autologous, 532, 535

cardiac, 538-539

graft failure, 535

early, 533-534

complications following, 533-541

graft-versus-host disease, 535-538

hematologic/immunologic, 534-535 hepatic, 539-540 immediate, 533 multisystem organ disease, 540-541 neurologic, 540 renal, 539 respiratory, 536-538 history of, 531-532 indications for, 532 process in, 532-533 survival rates in, 533 syngeneic, 532 types of, 532 BPD. See Bronchopulmonary dysplasia (BPD). Bradyarrhythmias, pharmacotherapy for, in resuscitation, 257-258 Bretylium, in resuscitation, 255, 257 Bronchiolitis obliterans, after bone marrow transplantation, 538 Bronchopulmonary dysplasia (BPD), nutritional support in, in adults, 73–74 in children, 73-75 Budd-Chiari syndrome, fulminant hepatic failure from, CABG. See Coronary artery bypass grafting (CABG). Calcium channel blockers, for cerebral perfusion, 244 for intracranial pressure reduction, 242 in congestive heart failure, acute, 267-268 Calories, requirement for, 12 Harris-Benedict equation for, 12 resting-energy expenditure for, 12-13 Calorimetry, in adult, direct, 12-14 indirect, 14 in child, direct, 67-68 indirect, 68 Campylobacter, diarrhea from, 122 Cancer, esophageal, epidemiology and etiology of, 177 esophagogastrectomy for, 178-183 presentation of, 177 Candidiasis, oral, HIV-AIDS-related, 123–124 Cannulation, arterial, catheter in, 558-559 complications of, 558 management of, 559-561 monitoring systems in, 559 Thunder Project study of, 557-560 Captopril, for chronic heart failure, 603 Carbapenems, resistance to, 317 structures of, 316 trade names of, 318 Carbohydrates, in hypermetabolism, in refeeding, 101 metabolism of, 97–98 requirement for, in cardiopulmonary disease, 59-61 in children, 68, 73-75 Carbonic anhydrase inhibitors, for chronic heart failure, Cardiac output, after cardiac transplantation, 639-641 in chest injury, 681 in inflammation and coagulopathies, 428-429 Cardiac toxicity, after bone marrow transplantation, 538-539 Cardiac transplantation, alternatives to, coronary artery bypass grafting, 624 outcomes of, 624-625 percutaneous transluminal coronary angioplasty, 623-624

in end-stage heart failure, 635-648

donor issues in, 635-637

Cardiac transplantation (Continued) organ availability, 635-636 selection criteria, 636 long-term considerations in, hypercholesterolemia, hypertension, 645 infection, 643, 645 nutrition, 646 psychosocial outcomes, 646 renal insufficiency, 645-646 operative procedure in, 639 postoperative complications of, 639-640 post-transplant care and, 640-643 recipient issues in, 637-638 communication, 637-638 financial, 637 selection criteria, 637 rejection and, 641-643 immunosuppressive therapy for, 643-644 types of, 641-643 success of, 635 waiting period for, outcomes in, 638-639 survival following, 623, 635 Cardiomyoplasty, dynamic, history of, 627-628 objectives of, 627, 630 outcome data for, 632 patient selection for, 620-621 postoperative complications of, 622 postoperative nursing and, 631-632 pulse train stimulation and, 629, 630 skeletal muscle transformation and, 628-629 for chronic heart failure, 627-633 Cardiomyostimulation, in cardiomyoplasty, 629, 630 Cardiopulmonary bypass, coagulopathies from, postoperative, 464 Cardiopulmonary disease, bronchopulmonary dysplasia, congenital heart defects, 74-76 malnutrition in, 57-59 nutritional support in, 57-64 complications from, 62 effectiveness of, 61-62 enteral, 61 nutrients in, 59-61 parenteral, 61 pediatric, 74-76 Cardiopulmonary resuscitation (CPR), dopamine in, 252-253 epinephrine in, 250-253 norepinephrine in, 252-253 phenylephrine in, 252, 254 vasoactive drugs in, 250-252 Cardiovascular disease, antithrombin III in, 504-505 Cardiovascular function, treatment outcomes management and, continuum of care and, 746 emergency department guidelines for, 749-750 Cardiovascular system, anesthetic effects on, 704 in disseminated intravascular coagulation, 402 pediatric, anatomy and physiology of, 370-371 catecholamines and, 371 digoxin and, 371-373 verapamil and, 373 Catecholamines, for cerebral perfusion, 243 in pediatric patient, 371 role of, in chronic heart failure, 601 Catheter(s). See also Cannulation, arterial. arterial, complications and management with, 557-562 intrapleural, postesophagogastrectomy, 181

Cell counts, in inflammation and coagulation, 425-427

Cenotoxin. See Antiendotoxin antibody(ies), HA-1A.

Central nervous system (CNS), in pediatric patient, 373 in disseminated intravascular coagulation, 402 Cephalosporins, resistance to, 317 structures of, 316 trade names of, 318 Cerebral perfusion, definition of, 241 hypotensive agents for, 243-244 importance of, 243 stimulation of, pharmacotherapy in, 243-244 vasoactive agents for, 243-244 CHDs. See Congenital heart defects (CHDs). Chest physiotherapy, in flail chest injury, 674 in pulmonary contusion, 678 CHF. See Chronic heart failure (CHF); Congestive heart failure (CHF). Children, nutritional support of, 65-78 administration of, 67, 70-71 assessment for, 66-68 energy needs and, 68 enteral, 67, 70, 76 in bronchopulmonary dysplasia, 72-74, 76 in chronic-critical illness, 72-73 in congenital heart defects, 74-76 in trauma, 70-72 macronutrients in, 69 micronutrients, 69 parenteral, 67, 70 versus adult, 65-66 starvation and stress response in, 69-70 Christmas disease. See Hemophilia(s), factor IX deficiency. Chronic heart failure (CHF), 569-672 cardiomyoplasty for, 627–633 epidemiology of, 569–573 incidence of, 570, 627 mechanical support in, pre-transplant, **649–659** mortality from, 572 myocardial revascularization for, 619-626 neurohormonal activation in, 599 renin-angiotensin-aldosterone system in, 600-601 sympathetic nervous system in, 599-600 pharmacotherapy for. See also named type, e.g., Diuretic(s) diuretics in, 581-585 evolution of, 575 inotropics in, positive, 589-597 neurohormonal agents in, 599-608 nursing implications of, 585 objectives in, 575 pathophysiologic processes and, 576 vasodilators in, direct-acting, 576-581 prevalence of, 570-571 quality of life with, 661-670 risk factors for, 571 sudden cardiac death from, 609-617 transplantation for, 635-648 Chronic obstructive pulmonary disease (COPD), malnutrition in, 58 Chylomicrons, 436-437 Chylothorax, postesophagogastrectomy, 182 Circulatory overload, transfusion-induced, 552 Citrate toxicity, transfusion-induced, 552 Clotting cascade, in coagulation, 391-395 in disseminated intravascular coagulation, 398-399 Clotting factors, in fulminant hepatic failure, 146 CMV. See Cytomegalovirus (CMV CNS. See Central nervous system (CNS). Coagulation. See also Hemostasis, control mechanisms in. assessment of, 425-426 blood vessels in, 309 clotting cascade in, 391-395

factor X11a in, 392-395 factor X1 in. 392-395 kallikrein in, 392-395 pathways in, 391-394 thrombin production in, 394-395 clotting factors in, 454-455, 460 replacement of, 469 endothelium in, vascular, 309 fibrinolytic system in, 395-396 inflammation and, assessment of, circulating inflammatory mediators in, 427 host defenses in, 427-428 laboratory values in, 425-427 tissue ischemia in, 425 cascades in, extrinsic and intrinsic, 416 in disseminated intravascular coagulation, 423-425 in multiple organ dysfunction syndrome, 419-421 in postischemic reperfusion injury, 421-423 mediators of, 414-419 inhibitors of, alpha, antiplasmin, 397 antithrombin III, 396 plasminogen activators inhibitor type 1, 397 protein C and protein S systems, 396-397 thrombin, 397 in reperfusion injury, postischemic, 423–424 lipoprotein(a) in, 435–443. See also *Lipoprotein(a)*. pathways in, 391-394, 453-455, 460-461, 526-527 plasma factors needed for, 463 platelet plug formation in, 390-391 vasoconstriction in, 309 vasospasm and platelet plug formation in, 453 Coagulation cascade, pathways in, extrinsic, 394 intrinsic, 391-393 thrombin production in, 394-395 Coagulation factor, deficiency of, 466-468 replacement of, 469 Coagulopathy(ies). See also Coagulation. acquired, 453-458 from fulminant hepatic failure, 145-146, 149 from liver disease, 456-457 from pancreatitis, acute, 194 from renal disease, 457-458 from vitamin K deficiency, 455-456 congenital, 445-452 blood vessels in, 445-446 in afibrinogenemia, 452 in Ehlers-Danlos syndrome, 446 in hemophilias, 447-451. See also Hemophilia(s). in hereditary hemorrhagic telangiectasia, 445 in Kasabach-Merritt syndrome, 446 in von Willebrand disease, 446-447 plasma phase in, 447-451 platelet phase in, 446-447, 451 uncommon, 451-452 of pregnancy, 475-487 disseminated intravascular coagulopathy, 481-483 abruptio placentae and, 482-483 amniotic fluid embolism and, 483 preeclampsia and, 483 HELLP syndrome, 475-481 hemolytic-uremic syndrome, 484 thrombocytopenia, 483-484 thrombocytopenic purpura, 484 von Willebrand's syndrome, 484-485

postoperative, 459-473

blood replacement for, 468

from platelet defects, 466

coagulation factor replacement for, 469 differential diagnosis of, 464-468

from coagulation factor deficiency, 466-468

from vascular integrity disruption, 466 hyperfibrinolysis, 468 management of, 466-468 perioperative contribution to, 463-464 pharmacotherapy for, 468-470 platelet infusion for, 468-469 prevention of, preoperative evaluation in, 461-463 Colony stimulating factors, cost of, 380 for septic shock, 334–335 Complement, in coagulation and inflammation, 414-415 Congenital heart defects (CHDs), in children, nutritional support in, 74-76 malnutrition in, 58 Congestive heart failure (CHF), acute, diastolic dysfunction in, 261–262, 267–268 pharmacotherapy for, 261-269 stabilization in, 262-263 systolic failure in, 261-267 CONSENSUS (Cooperative North Scandinavian Enalapril Survival Study), 602-604 Constipation, chronic, in diabetes mellitus, 53 Continuous positive-airway pressure (CPAP), in adult respiratory distress syndrome, 728 Contusion(s), from blunt chest injuries, cardiac, 681 pulmonary, 676-678 Cooperative North Scandinavian Enalapril Survival Study (CONSENSUS), 602-604 COPD (chronic obstructive pulmonary disease), malnutrition in, 58 Coronary artery bypass grafting (CABG), in left ventricular dysfunction, 619-626 candidate for, ideal, 622 heart transplantation versus, 624 mortality and morbidity with, 622-623 myocardial viability and, 621 operative techniques in, 622 results of, long-term, 623 survival prediction and, 621-622 Corticosteroids, in septic shock, 335 Cost, of colony stimulating factors, 380 of drugs, case studies of, 378-379 ethics and, 379-382 savings in, 222 of erythropoietin, 380, 382 of thrombolytic agents, 380 Coumadin, enteral nutrition and, interaction with, 35 CPAP. See Continuous positive-airway pressure (CPAP). CPR. See Cardiopulmonary resuscitation (CPR). Creatinine-height index, 11-12 Critical care unit, treatment outcomes management and, guidelines for, 747, 750-752 Crush injury, thoracic, 687-688 Cryoprecipitate, composition of, 548-549 in hemophilia, 450 indications for, 549 Cryptosporidium, diarrhea from, 122 Cytochrome P450, in drug metabolism, in children, 368-Cytomegalovirus (CMV) infection, diarrhea from, 123 posttransplantation, of small intestine, 212

DDAVP. See Desmopressin acetate (DDAVP).
 Desmopressin acetate (DDAVP), for coagulopathy, postoperative, 469–470
 Diabetes mellitus, chronic heart failure and, 571 classification of, insulin-dependent, 47–49 non-insulin dependent, 48–50

transfusion-induced, 551

Diabetes mellitus (Continued) gastrointestinal disorders in, 52-53 in critically ill patient, nutritional support for, 51-53 indications for, 51, 53 protocols for, 53-54 stress response in, 49-50 nutritional support in, 47-56 pathophysiology of, 47 Diabetic ketoacidosis (DKA), 48, 51 Dialysis, nutritional management in, 88-90 delivery problems in, 93 dietician-nurse relationship in, 92-93 intradialytic, 89-90 intraperitoneal, 90 types of, 87-88 Diarrhea, chronic, in diabetes, 53 HIV/AIDS-related, bacterial, 122-123 infectious and noninfectious, 121-123 protozoan, 122 viral, 123 posttransplantation, of small intestine, 212 Diastolic dysfunction, in congestive heart failure betablockers for, 267 calcium channel blockers for, 267-268 pathology of, 261-262 venodilators for, 267 verapamil for, 268 Diazepam (Valium), in thoracic trauma, 705-706 DIC. See Disseminated intravascular coagulation (DIC). Digoxin, in pediatric versus adult patient, dosage of, toxicity of, 372 Dilantin. See Phenytoin (Dilatin). Disseminated intravascular coagulation (DIC), 389-410 antithrombin III in, 503-504 characterization of, 389-390 clinical presentation and assessment of, multiple organ dysfunction syndrome in, 402 systems in, 401-402 coagulation and inflammation in, 423-425 etiology of, 389, 481-482 in pregnancy, 482-483 laboratory data in alterations in, 403-404 new tests for, 404 management of, antithrombin III concentrate in, 406 aseptic technique and universal precautions, 405 blood component replacement therapy for, 405 fibrinolytic inhibitors in, 406 goals in, 404 hemodynamic monitoring in, 407 hemostatic cofactor replacement in, 406 heparin for, 405-406 investigational therapies in, 406 maintenance of organ viability in, 406-407 medical history and, 407 nutrient delivery in, 407 oxygen supply and transport in, 407-408 removal of pathologic trigger, 404 restoration of balance in, 405-406 pathophysiology of, 398-401

medical history and, 407
nutrient delivery in, 407
oxygen supply and transport in, 407–408
removal of pathologic trigger, 404
restoration of balance in, 405–406
pathophysiology of, 398–401
clotting cascade stimulation in, 398–399
hemorrhage in, 400–401
thrombosis in, 399–400
Distraction, in pain management, 719–720
Distribution, drug, in adults, 230–231
in children, 368
Diuretic(s), for congestive heart failure, acute, 262–263
commercially available, 582
distal, thiazides, 583

future of, 584-585 aquaretics, 585 atriopeptidase inhibitors, 585 loop, differences in, 583-584 mechanism of action of, 583-584 mechanism and site of action of, 581-582 potassium-sparing, 583 proximal tubular, 584 resistance to, 584 in pediatric patient, 370 DKA (diabetic ketoacidosis), 48, 51 Dobutamine (Dobutrex), for cerebral perfusion, 243 for chronic heart failure, 591-592 long-term use of, 593 for congestive heart failure, acute, 264-265 in pediatric patient, 371 Dobutrex. See Dobutamine (Dobutrex). Donor(s), cardiac, availability of, 635-636 recipient's feelings towards, 667 selection of, 636 small intestine, 204 Dopamine, for chronic heart failure, 591-592 for congestive heart failure, acute, 266 in pediatric patient, 371 in resuscitation, 252-253 Dopexamin, for chronic heart failure, investigational, 594 Doxacurium, 304 Drains, postesophagogastrectomy, 181-182 Duodenum, trauma to, blunt, 133-134 Dysphagia, HIV-AIDS-related, 123-124 in esophageal cancer, 177

EACA (epsilon-aminocaproic acid), for coagulopathy, ECMO. See Extracorporeal membrane oxygenation (ECMO). Edema, in fulminant hepatic failure, cerebral, 144 pulmonary, 145 EERT (emergency room resuscitation thoracotomy), 692 Ehlers-Danlos syndrome, 446 Elderly, chest trauma in, 735-740 epidemiology of, 735-736 mortality from, 736-737 respiratory function and, 737-738 therapeutic issues in, 738-739 falls versus vehicular accidents, 736, 739 pneumonia risk in, 739 stress and, 739 types of, 736 Electrolytes, in nutritional support, 31-36 in resuscitation, 255, 258 management of, in intensive care patient, 31-36

Dysrhythmias, in fulminant hepatic failure, 145, 148

postesophagogastrectomy, 183

management of, in intensive care patient, 31–36 monitoring of, during diuretic therapy, 583, 585 replacement of, in pancreatitis, acute, 196–197 Embolectomy, for mesenteric ischemia, 174–175 for pulmonary thrombosis, 495 Embolism(s) See also under *Thromboembolism(s)*. air, 496 amniotic fluid, 483 cerebral, 526 fat, 495 formation of, 490–491 pulmonary, after bone marrow transplantation, 538 septic, 496 Emergency room resuscitative thoracotomy (ERRT), 692 Enalapril, for chronic heart failure, mortality rates and,

hydralazine-isosorbide dinitrate versus, 581 Encephalopathy, hepatic, 42, 143-144, 148 Endothelial cells, in coagulation and inflammation, 415-Endotracheal tube, care of, 278 effect of, on aerosol therapy, 274-277 End-stage renal disease (ESRD), clinical signs of, 82-84 development of, 84-85 diet in, 82-83, 85-87 Energy, expenditure of, in child, 66-67, 69 nutrition and, in adult, 12-14 Enoximone, for chronic heart failure, 595 Enteral nutrition, access devices for, pediatric, 67 composition of, 25-28 in selected formulations, 27 for diabetic patient, blood glucose control and, 53-55 formulas available for, 52 insulin administration and, 54-55 nursing considerations and, 55 gut mucosa and, 23-25 immune function and, of gastrointestinal tract, 113in cardiopulmonary disease, 61 in pancreatitis, 40-41 acute, 198 pediatric, 70 devices for, 67 strategies for, 76 postesophagogastrectomy, 181 Epidural space, analgesia in, 292-293 Epinephrine, in resuscitation, 250-253 high-dose, 251-252 Epsilon-aminocaproic acid (EACA), for coagulopathy, 469-470 ERRT. See Emergency room resuscitative thoracotomy (ERRT). Erythropoietin, cost of, 380, 382 Esophageal varices, bleeding, 153-162 balloon tamponade for, esophagogastric, 156-157 complications from, 158-159 endoscopy of, 155 liver transplantation for, 161 pathophysiology of, 153 pharmacotherapy for, 155–156, 159 prevention of, 159–161 sclerotherapy for, 155, 159 surgery for, 157-160 volume replacement in, 154-155 Esophagogastrectomy, 177-184 approaches to, abdominal, 178-179 thoracoabdominal, 179 transhiatal, 179-180 indications for, 178 postoperative care and, 180 preoperative preparation for, cardiovascular, 178 nutritional, 178–179 pulmonary, 178 therapeutic, 178 recuperative care and, cardiovascular, 180 nutrition in, 181 pain management in, 181 respiratory, 180-181 tubes and drains in, 181-182

wound healing in, complications of, 182

secondary procedures and, 180

disruption of, 695

perforation from, 694

trauma to, diagnosis of, 132

Esophagus. See also Tracheobronchial tree.

esophagogastrectomy of, 177-184

management of, 132-133 mechanism of, 130, 132 varices of, bleeding, 153-162 ESRD. See End-stage renal disease (ESRD). Ethics, drug dilemmas in, 377-382. See also Cost, of drugs case studies of, 378-379 cost issues in, 379-382 in decision making, 378-379 institutional committees and, 20-21 issues in, in renal failure, 82-87, 91-92 nutritional and, withholding and withdrawal of, 17-18, 20 principles of, 19-20, 377-378 termination of treatment and, 18-19 Etomidate (Amidate), in thoracic trauma, 705 Excretion, renal, of drug, in children, 369-370 Exercise program, after cardiac transplantation, 640-641 Extracorporeal membrane oxygenation (ECMO) system, in adult respiratory distress syndrome, 729-731 for cardiac donor, 653 for cardiac transplant recipient, 651-653 Extubation, in chest trauma, 707-708

Factor concentrates, transfusion of, 548 evaluation of, 555 Factor replacement, in hemophilia, 450 Factor VIII, in hemophilia, 447-450. See also Hemophilia(s), factor VIII deficiency. Falls, versus motor vehicle accidents, in elderly, 736, 739 Fat, in refeeding, 101 metabolism of, 98 requirement for, in cardiopulmonary disease, 60 in children, 68 Fatty acids, polyunsaturated, immune response modulation and, 117 Felodipine, for chronic heart failure, 579 Fenoldopam, for arterial vasodilation, 579 Fentanyl, for analgesia, 293 Fibrinogen. See also Cryoprecipitate. Fibrinolysis, in hemostasis, 460-462 Fibrinolytic inhibitors, for disseminated intravascular coagulation, 406 Fibrinolytic system, 395-396 Fibrosis, pulmonary, after bone marrow transplantation, Fistula, pancreatic, from trauma, 136-137 FK-506, immunosuppression with, 206-207 Flail chest injury, 675-676 Fluid, replacement of, in esophageal varices, bleeding, 154-155 in pancreatitis, acute, 196 Fractures, in blunt chest injury, 674-676, 682 flail chest, 675-676 of thoracic cage, 675 Free radicals, formation of, in reperfusion injury, postischemic, 422 Fresh frozen plasma, administration of, 548, 554 complications from, 548 usage guidelines for, 547-548 Fulminant hepatic failure, 141-151

definition of, 141

etiology of, hypoperfusion, 143 infectious, 141–142

liver transplantation for, 149-150

management of, 147-149

pharmacologic and toxic, 142-143

manifestations and treatment of, acid-base, 146

Fulminant hepatic failure (Continued) cardiovascular, 144-145, 148 gastrointestinal, 147 hematologic, 145-146, 149 infectious, 147, 149 metabolic, 146-147, 149 neurologic, 143-144, 148 pulmonary, 145, 149 renal, 145, 149

Furosemide, for intracranial pressure reduction, 242

Gallstones, pancreatitis from, acute, 186 GALT (gut-associated lymph tissue), immune function Gastric tonometry, in perfusion assessment, 425

Gastroenterology, 107-213

Gastrointestinal tract, anatomy of, 171-172

immunologic role of, 107-120 bacteria in, 110, 113

cellular, 112 humoral, 110–112 liver in, 112-113

lymphoid tissues in, 110-111 macrostructure in, 107-109 microstructure in, 107-109

modulation of, nutritional, 113-118

mucosa in, 108-110 secretions in, 110

in disseminated intravascular coagulation, 402 in HIV/AIDS, anorectal disease, 124-125

infections in, 124-125

trauma to. 127-140 blunt versus penetrating, 128 colonic, 137-139

complications of duodenal, 133-135

esophageal, 130-133 evaluation of, 128-132 gastric, 131, 133

historical perspective in, 127-128 monitoring in, 130-132

nursing assessment in, 129 pancreatic, 135-137

small bowel, 135 Gastroparesis, in diabetes, 52-53 Giardia, diarrhea from, 122

Glomerular filtration rate, in pediatrics, 369-370

Glucose, blood, enteral nutrition and, 53-55 total parenteral nutrition and, 51, 53-54

metabolism of, 51-52 monitoring of, during nutritional support, 53-55

Glucuronidation, of drugs, in pediatrics, 369 Glutamine, immune response and, modulation of, 114-

in enteral nutrition, 25-26

in refeeding, in hypermetabolism, 102

Graft(s), occlusion of, lipoprotein(a) and, 439-440 rejection of, heart, 641-643

small intestine, 211

Graft-versus-host disease, after bone marrow transplantation, 535-538

acute versus chronic, 535 human lymphocyte antigen disparity in, 535

incidence of, 536 lung disease and, 537-538

treatment of, 536

Granulocyte colony stimulating factor (G-CSF), 550

Granulocyte/monocyte colony stimulating factor (GM-

Granulocytes, transfusion of, complications from, 549 dosing of, 549-550 evaluation of, 555

indications for, 549 Great vessels, blunt injury to, 682-684 penetrating injury to, 691-693 thoracotomy for, 691-692

Guns and firearms, chest injury from, cavitation, 688-689

combustion, 689 tissue crush, 687-688

Gut-associated lymph tissue (GALT), immune function

Gut mucosa, bacteria and, translocation of, 24-25

in critical illness, 24-25 malnutrition and, 24

normal, 23-24

nutritional support of, 25

H2 antagonists. See Histamine-2 (H2) antagonists.

Harris-Benedict equation, 12

HDLs (high-density lipoproteins), 436-437

Heart. See also Cardiac transplantation; Cardiopulmonary

malnutrition effect on, 57-58

HeartMate 1000 LVAD, 655-656

Heart rate, variability of, sudden cardiac death from, 612-614

Height-body weight, 6-7

HELLP syndrome, and coagulopathies of pregnancy, 475-487. See also Coagulopathy(ies), of pregnancy.

definition of, 475 etiology of, 475

impact on pregnancy, 478-479

laboratory values in, 478-479 management of, antihypertensive therapy for, 481 hemodynamic monitoring in, invasive, 479

maternal and fetal assessments in, 479-480 medical, 479

MgSO, in, 479-481 nursing, 479-481

pathophysiology of, 475-478 Hemarthrosis, in hemophilia, 448

Hematoma, intramural duodenal, 134

Hematuria, in hemophilia, 449

Hemodialysis, 87-88

Hemodilution, coagulopathies from, postoperative, 463 Hemodynamic monitoring, invasive, in HELLP

syndrome, 479

Hemodynamics, evaluation of, during diuretic therapy,

Hemoglobin, in inflammation and coagulopathies, 429 Hemolysis, elevated liver enzymes, and low platelets (HELLP) syndrome. See HELLP syndrome

Hemolytic-uremic syndrome, in pregnancy, 484 Hemophilia A. See Hemophilia(s), factor VIII deficiency.

Hemophilia B. See Hemophilia(s), factor 1X deficiency. Hemophilia(s), 447-451

factor VIII deficiency, 447-450 definition of, 447-448

factor replacement for, 450 inhibitors of, acquired, 449-450

manifestations of, 448-449

treatment of, 450

factor IX deficiency, 450

factor XI deficiency, 451

Hemorrhage(s), assessment of, 425-426 in disseminated intravascular coagulation, 400-401 in hemophilia, intracranial, 448 of peripheral nervous system, 448 post-thrombolytic, intracerebral, 515 intracranial, 514, 516-517 subarachnoid, 515-516 Hemosiderosis, transfusion-induced, 552 Hemostasis. See also Congulation.

evaluation of, tests for, 464-466 inhibitors of, 499-500

mechanisms in, coagulation inhibitors, 396-397 coagulation pathways, 391-394, 454-455, 460-461 fibrinolysis, 460-462

platelet plug formation, 453, 459-460 vasoconstriction, 453, 459

pharmacotherapy and, 469-470 serine proteases in, 499-500 thrombolysis in, 356

Hemothorax, from penetrating injury, 693-694

Heparin, administration of, 519 complications with, 519-520

for disseminated intravascular coagulation, 405-406 in antithrombin III activity, 499-500 mechanism of action of, 519

thrombocytopenia from, 520-521 uses of, 519

Heparinization, coagulopathies from, postoperative, 463-464

Heparinoids, for stroke, 525-529. See also Stroke, ischemic.

advantages of, 526 versus heparin, 526 low molecular weight, 526

non-neurologic uses of, 526-527

prototype, ORG10172, 527-529. See also ORG10172. Hepatic disease. See also Fulminant hepatic failure.

acute-on-chronic, 42 fulminant, 41-42 liver transplantation for, 42-43

nutrition and, assessment of, 41 needs for, 37-38

Hepatitis, fulminant hepatic failure from, 141–142 transfusion-induced, 551 Hepatobiliary disease, HIV/AIDS-related, 124

High-density lipoproteins (HDLs), 436-437 Histamine-2 (H₂) antagonists, for stress ulcer, 167, 325-331

prophylactic, for stress-related mucosal damage, 327-329

HIV/AIDS, from transfusions, 551 gastrointestinal tract and, 121-126

HNKC (hyperosmolar nonketotic coma) syndrome, 49-

Host defenses, assessment of, 427-428

Human IgM monoclonal anti-lipid A antibody(ies), E5, 337

HA-1A, 336-337

Hydralazine, oral, for congestive heart failure, acute, 266 Hydralazine-isosorbide dinitrate, versus enalapril, 581 versus prazosin, 580-581

Hypercholesterolemia, after cardiac transplantation, 646 Hypercoagulability, in thrombus formation, 490

Hyperfibrinolysis, 468

Hyperglycemia, from enteral formulas, 52 from total parenteral nutrition, 51–52

in pancreatitis, 40, 192 Hyperkalemia, from angiotensin-converting enzyme

inhibitors, 604 transfusion-induced, 552 Hyperlipidemia, in pancreatitis, 40

Hypermetabolism, 97-105. See also Metabolism. assessment of, nutritional and metabolic, 99-102

stress stratification in, 100-101 feeding regimen in, 101-103 injury and, response to, 97-99

Hyperosmolar nonketotic coma (HNKC) syndrome, 49-

Hypertension, after cardiac transplantation, 645

chronic heart failure and, 571 portal, beta blockers for, 159 esophageal varices from, 153

etiology of, 153-154 in fulminant hepatic failure, 147

Hypocalcemia, in fulminant hepatic failure, 147, 149 in pancreatitis, 40, 192-193

Hypoglycemia, in fulminant hepatic failure, 146 Hypokalemia, in fulminant hepatic failure, 146-147, 149 Hypomagnesemia, in fulminant hepatic failure, 147, 149 Hyponatremia, in fulminant hepatic failure, 146, 149 Hypophosphatemia, 62

in fulminant hepatic failure, 147, 149

Hypotension, from angiotensin-converting enzyme inhibitors, 604

in fulminant hepatic failure, 144-145

Hypothermia, coagulopathies from, postoperative, 463 transfusion-induced, 552

Ibopamine, for chronic heart failure, investigational, 593 Ibuprofen, for inflammation and coagulopathies, 430 IDDM. See Insulin-dependent diabetes mellitus(IDDM).

IGT (impaired glucose tolerance), 47 IL-1. See Interleukin-1 (IL-1).

Imagery, in pain management, 720

Immune response, gastrointestinal tract in, 107-120. See also Gastrointestinal tract, immunologic role of.

Immunonutrients, arginine, 115-117 glutamine, 114-116

Immunosuppression, after transplantation, cardiac, 643-644

small intestine, 206-207, 212 agents for, nutrition and, 91

Immunotherapy. See also Antiendotoxin therapy.

for sepsis, mechanisms of, 337 role of, 336

studies of, 336-337

with antiendotoxins, 335-337, 347-352, 354 with immunoglobulins, 335-337

targets for, 333-343

Impaired glucose tolerance (IGT), 47 Infection(s), after bone marrow transplantation, 534 cardiac, 539

hepatic, 539-540 respiratory, 536-537

after cardiac transplantation, 643, 645

after cardiomyoplasty, 632

after implantation of ventricular assist devices, 657

HIV-associated, gastrointestinal, 121-126 nosocomial, antibiotics for, 318-320

administration of, 320-321 bacteremia, 320-321

pathogens in, 315 pneumonia, 318–320 sites of, 315, 321

susceptibility to, 313 urinary tract, 320

Inflammation, and coagulation. See also Coagulation. assessment of, parameters in, 425-428

Inflammation (Continued) management of, increase in oxygen supply and demand, 428-429 investigational therapies for, 429-430 nutritional support, 429 measurements of, 427 mediators of, 411-414 physiology of, 411-413 relationship and pathophysiologic potential of, 414syndromes associated with, 419-425 triggers of, 412 in reperfusion injury, 423-424 Inflammation cascade, 412-413 mediators in, 412-414 triggers of, 412 Infusion, continuous, of neuromuscular blocking agents, Injection, intermittent bolus, of neuromuscular blocking agents, 300-301 of analgesics, intermittent intravenous, 290-291 intramuscular, 290 Inotropic agent(s), for chronic heart failure, 589-597 actions and effects of, 589-590 beta-adrenergic agonists, 591-593 digitalis glycosides, 590-591 goals of, 589 phosphodiesterase inhibitors, intravenous, 594 oral, 595 Insulin-dependent diabetes mellitus (IDDM), 47-49 Insulin, enteral nutrition and, 54-55 total parenteral nutrition and, 53-54 Interleukin-1 (IL-1), for septic shock, 338-339 in coagulation and inflammation, 417 Intracranial pressure, increase in, management of, 242pathophysiology of, 240-241 reduction of, pharmacotherapy for, 241-242 Intrathecal space, analgesia in, 292-293 Intubation, for tracheobronchial tears, 680 in chest trauma, 697-699 Ischemia, atherosclerotic, 525 mesenteric, acute, 171-175 causes of, 172 diagnosis of, 173-174 response to, cellular, 172-173 treatment of, pharmacologic, 174 surgical, 174-175 tissue, assessment of, 425-426 Isoproterenol, in resuscitation, 254, 258 Isosorbide dinitrate, for acute congestive heart failure,

Justice, 20, 377-378

Isosporabelli, diarrhea from, 122

Kabikinase (streptokinase), 359–360 Kasabach-Merritt syndrome, 446 Ketamine, in thoracic trauma, 705 Kidneys, excretion via, in pediatric patient, 369–370, 373 function of, 79–81 transplantation of, nutritional issues in, 90–92 Kwashiorkor, 3

with hydralazine, for chronic heart failure, 580-581

Left ventricular dysfunction, congestive heart failure and, 619-620 definition and causes of, 620-621 myocardial revascularization for, 621-623 natural history of, 621 percutaneous transluminal coronary angioplasty for, sudden cardiac death from, 625 Lidocaine, for seizures, 239 in resuscitation, 254, 256 Life-sustaining treatment, 17 Lipase, serum, in pancreatitis, 190 Lipids, in enteral nutrition, 28 Lipoprotein(a), gender and, 439 graft occlusion and, 439-440 in atherogenesis, 439-440 plasminogen and, 437-438 reduction of, diet in, 441 education in, 440-441 pharmacotherapy in, 441-442 role of, in coagulation, 435-443 Lipoprotein(s), apoproteins, 436-437 chylomicrons, 436-437 classification of, 435-437 definition of, 435 high-density, 436-437 lipoprotein(a), 437-440 low-density, 436-437 schematic of, 436 very low-density, 436-437 Liver. See also Fulminant hepatic failure; Hepatic disease. diseases of, coagulopathies from, 456-457 dysfunction of, after bone marrow transplantation, 539-540 in veno-occlusive disease, 540 infections of, HIV/AIDS-related, 124 injury to, drug-induced, 540 transplantation of, 149-150 Low-density lipoproteins (LDLs), 436-437 Lungs. See also Cardiopulmonary disease; Cardiopulmonary resuscitation (CPR). penetrating injury to, 692-694 malnutrition and, effect of, 57-58

Latissimus dorsi muscle, in cardiomyoplasty, 628-630

LDLs (low-density lipoproteins), 436-437

Macrophages, in coagulation and inflammation, 416-417 Magnesium, in total parental nutrition, 33 MAI. See Mycobacterium avium intracellulare (MAI). Malabsorption syndromes, vitamin K deficiency from, Malnutrition. See also Starvation. effects of, on heart and lungs, 57-58 gut mucosa and, 24 in cardiopulmonary disease, detection of, 58 with and without catabolism, 58-59 in hepatic disease, 43 protein-calorie, 2-3 response to, of end organs, 98 vitamin K deficiency from, 455-456 Mannitol, for intracranial pressure reduction, 241-242 Marasmus, 2-3 McGill pain questionnaire, 715-716 MDI. See Metered-dose inhaler (MDI) Medication, errors in, 222-223 Metabolism. See also Hypermetabolism. in renal failure, 84 of drug, in pediatrics, 368-369

Metered-dose inhaler (MDI), for aerosol therapy, adapters for, 273, 276 spacer device for, 274–275 versus nebulizer, 273–274 Midarm muscle circumference, 7 Midazolam (Versed), in thoracic trauma, 705–706 Milrinone, for chronic heart failure, 594–595 Mivacurium, 304 MODS. See Multiple organ dysfunction syndrome (MODS). Molsidomine (Molsidomine), 578 Monobactams, resistance to, 317 structures of, 316 trade names of, 318 Monoclonal antibodies, for inflammation and

coagulopathies, 429–430 MSOF (multisystem organ failure), after bone marrow transplantation, 540–541

transplantation, 540–541
Mucous membranes, analgesia via, 293
Multiple organ dysfunction syndrome (MODS),
coagulation and inflammation in, 419–421
coagulation and inflammation in, role of, 420
definition of, 419
inflammation versus infection in, 419–420
pathophysiology of, 420, 422

Multisystem organ failure (MSOF). See also Multi system organ disease (MSOD). after bone marrow transplantation, 540–541

Muscle relaxants, in trauma anesthesia, 706–707 Mycobacterium avium intracellulare (MAI), diarrhea from, 122–123

hepatobiliary disease from, 124 Myocardial infarction, acute, thrombolysis in, 358–360 reperfusion injury following, 424

Myonecrosis, after cardiomyoplasty, 632

Nebulizer, effect of, on aerosol therapy, 276–278 Neomycin, for lipoprotein(a) reduction, 441–442 Nephrotic syndrome, antithrombin III in, 504 Nephrotoxicity, aminoglycoside, in pediatric patient, 373–374

Neurohormonal agent(s), for congestive heart failure. See also named class. angiotensin-converting enzyme inhibitors, 601–604 beta-blockers, 604–606

Neurologic therapy, 237–246 for cerebral perfusion, 243–244 for intracranial pressure, reduction of, 241–242 for seizures, 238–239. See also Anticonvulsant(s); Sei-

zures; Status epilepticus. Neurologic toxicity, after bone marrow transplantation,

540 Neuromuscular blockade, agents for, 297–311. administration of, 300–301 atracurium, 302-303 cautions with, 306 classification of, 298-300 complications with, 308 doxacurium, 304 drug interactions with, 306-307 monitoring of, 304-306, 308 neuromuscular transmission and, 297-299 pancuronium, 303-304 paralysis from, prolonged, 308 pipecuronium, 304 prophylactic measures with, 306 resistance to, 307-308 selection of, 300-301 succinvlcholine, 301-302, 706-707

vecuronium, 303
indications for, 299–300
in mechanical ventilation, 297, 299
in thoracic trauma, 705–706
Neutrophil count, 425–427
Neutrophils, role of, in coagulation and inflammation, 416–417
in reperfusion injury, postischemic, 422
Nicotinic acid, for lipoprotein(a) reduction, 441–442
NIDDM. See Non-insulin-dependent diabetes mellitus

(NIDDM).
Nipride. See Nitroprusside (Nipride).
Nitrates, for congestive heart failure, 578
Nitrogen balance, in hypermetabolism, 100
Nitroglycerine, for cerebral perfusion, 244
for congestive heart failure, acute, 264–266

for diastolic dysfunction, 267 Nitroprusside (Nipride), for cerebral perfusion, 244 for chronic heart failure, 580

for congestive heart failure, acute, 264–265 Non-insulin-dependent diabetes mellitus (NIDDM), pathophysiology of, insulin insufficiency in, 48–49 insulin resistance in, 49, 51

Nonopioid(s), acetaminophen, 289, 291 action of, 282–283 adverse reactions to, 287–288 gastrointestinal, 287–288 hematologic, 288

hematologic, 288 hypersensitivity, 288 renal, 288

dosage of, 289, 291 drug interactions with, 289 indications for, 284 nonsteroidal anti-inflammatory drugs, 289, 291

pharmacokinetics of, 285–286 salicylates, 289, 291

Nonsteroidal anti-inflammatory drugs (NSAIDS), 289, 291

Norepinephrine, role of, in chronic heart failure, 601 in resuscitation, 252–253 Novacor, 653–655

NSAIDS (nonsteroidal anti-inflammatory drugs), 289, 291

Nucleotides, in immune response modulation, 117–118 Nutrition. See also Enteral nutrition; Total parenteral nutrition (TPN).

nutrition (TPN).
assessment of, anthropometrics in, 4, 6–7
energy needs in, 12–14
history in, 3–4
laboratory studies in, 7–12
malnutrition and, 2–3
physical examination in, 4–6
starvation and, 1–2
in hypermetabolic patient, 97–103

in intensive care patient, with cardiopulmonary disease, 57–64

with diabetes mellitus, 47–56 with pancreatobiliary disease, 37–45 with renal failure, 79–96

in intensive care unit, 1–16. See also *Malnutrition*. assessment of, 17–21 drugs and, 31–36

electrolytes and, 31–36 enteral feeding and, 23–29 ethics and, 17–21

in the pediatric intensive care unit, **65–78** preoperative, for esophagogastrectomy, 178–179 status of, assessment of, 427

supportive, 429

after cardiac transplantation, 646

Nutrition (Continued) drug management in, 31-36 in cardiopulmonary disease, 61 in pancreatitis, 198 sodium in, 31-32

Occlusion, coronary. See Myocardial infarction, acute. peripheral arterial, urokinase for, 360-363 Odynophagia, HIV-AIDS-related, 123-124 Opiates, in thoracic trauma, 706 Opioid antagonists, for septic shock, 339 Opioids. See also Nonopioids. adverse reactions to, 286–287 classification of, 282-283 dosage of, 290-291 drug interactions with, 288-289 indications for, 283-284 mechanism and sites of action of, 282-283 pharmacokinetics of, 284-285 Oral contraceptives, effect on antithrombin III, 504 ORG10172, activity of, 528 administration of, 528 adverse reactions to, 528 description of, 527 patient selection for, 528-529 nursing role and, 528-529 outcomes of, 528 Overfeeding, 62 Oxygen, demand for, immune system dysfunction and,

supply of, tissue ischemia and, 428-429 toxic metabolites of, in coagulation and inflammation,

Oxygen saturation, arterial, in inflammation and coagulopathy, 429

Pain. See also Analgesia. acute, analgesia for, 281-295 assessment of, behavioral, 715 physiologic, 715-716 verbal, 715 consequences of, 716 control of, in flail chest injury, 678 effects of, 281 in thoracic trauma, 713-722 management of, cutaneous stimulation, 719 epidural analgesia, 717–718, 720 in pancreatitis, 197 in small intestine transplantation, 208 in substance abuser, 720 intrathecal analgesia, 718 local anesthetics, 719 nonsteroidal anti-inflammatory drugs, peripherally acting, 718-719 patient-controlled analgesia, 717 principles of, 717 psychologic therapies, 719-720 research in, 720 mechanisms of, 715-716 stimulants of, 716 transmission of, 281-282 Pancreas, trauma to, 136-137 fistula from, 136-137 Pancreatitis, acute, 185-202 classification of, 185

clinical signs of, 188-189

complications of, cardiovascular, 192, 198-199 central nervous system, 194 hematologic, 194 metabolic, 192-193 pulmonary, 191, 197 renal, 194 retinopathy, 194–195 septic, 193–194 skin and joint, 194 description of, 185 diagnosis of, 189-191 neci :..zing, 189, 199 no ... tion in, altered, 38, 40 needs in, 37-38 pathogenesis of, 185-188 pathophysiology of, 187-188 Rai on criteria for, 38, 40 in fulminant hepatic failure, 147 management of, assessment in, prognostic, 195-196 collaborative, 195 nursing diagnoses in, 195 stabilization in, 196-197 supportive therapies in, 197-198 surgical, 199-200 systemic, 198-199 Pancuronium, 303-304 Papaverine hydrochloride, for mesenteric ischemia, 174 Paraldehyde, for seizures, 239 Partial thromboplastin component (PTC) deficiency. See Hemophilia(s), factor IX deficiency Patient-controlled analgesia (PCA), 292, 719 PCA. See Patient-controlled analgesia (PCA). PEEP (positive end-expiratory pressure), 728 Penetrating chest injury(ies), 687-694 assessment of, airway, breathing, circulation in, 689-690 secondary survey in, 690 cardiovascular, cardiac rupture, 690 pericardial tamponade from, 690-691 diaphragmatic, 695 esophageal, 694-695 from guns and firearms, 687-689 cavitation, 688-689 combustion, 689 tissue crush in, 687-688

from stab wounds, 691 great vessel and aorta, 691-692 mortality from, 687 pulmonary, communicating pneumothorax, 693 hemothorax, 693-694 pneumothorax, 692 tension pneumothorax, 692-693 tracheobronchial, 694 Penicillins, resistance to, 317 structures of, 316 trade names of, 318 Pentoxifylline, for inflammation and coagulopathies, 430

Percutaneous transluminal angioplasty (PTCA), 623-624 Perfusion, assessment of, gastric tonometry in, 425 Pericardial tamponade, from blunt chest injuries, 681 in penetrating chest injury, 690-691

Peritoneal lavage, diagnostic, in gastrointestinal trauma,

in pancreatitis, 198

Pharmaceutical care, in intensive care unit, 221-225 concept of, 223-224 drug-related problems in, 221-222, 224 errors in, 221-223 impact of, 224 implementation of, barriers to, 224-225

interventions in, 222-223 model for, 224 mortality and morbidity from, 224 pharmacist role in, 222-223

Pharmacodynamics. See also Pharmacokinetics. definition of, 367 pediatric, 367-375

cardiovascular, 370-373 in central nervous system, 373 renal, 373-374

Pharmacokinetics. See also Pharmacodynamics; Serum drug concentration (SDC); Therapeutic drug monitoring.

absorption in, 229-231

accumulation in, to steady state, 231-232 definition of, 227, 367

distribution in, 230-231

dosing regimens and, 231 elimination in, 230-231

in critical care, 227-235 models in, 228-230

pediatric, absorption in, 367-368 distribution in, 368 excretion in, renal, 369-370

metabolism in, 368-369

pharmacodynamics versus, 227 terms in, common, 234

therapeutic drug monitoring in, 227–229, 231–233 Pharmacotherapy. See *Pharmaceutical care*.

Pharmacy and therapeutics (P&T) committee, drug therapies and, 380, 382

Phenytoin (Dilantin), for seizures, 238-239 Phosphorous, in nutritional support, 33

Pipecuronium, 304

Plasma. See Fresh frozen plasma.

Plasma phase, congenital coagulopathies in, 447-451 Platelet phase, congenital coagulopathies in, 446-447,

Platelet plug, formation of, in hemostasis, 453, 459-460 Platelets, aggregation of, heparin-induced, 520-521 therapies for, 521

defects in, coagulopathy from, postoperative, 466 in coagulation and inflammation, 412-414, 418-419 in fulminant hepatic failure, 146

infusion of, postoperative, 468-469 in platelet plug formation, 390-391

aggregation in, 391 release reaction in, 391

shape change in, 390-391 transfusion of, evaluation of, 555

indications for, 547

storage and handling for, 546-547 Pneumonia, after bone marrow transplantation, 537 in elderly, 739

nosocomial, antibiotics for, 319-320

drug-related, 330 pathogenesis of, 318-319

Pneumonitis, interstitial, after bone marrow transplantation, 536–537

Pneumothorax. See also Hemothorax.

communicating, from penetrating injury, 693 tension, from blunt injury, 679 from penetrating injury, 692-693

Positive end-expiratory pressure (PEEP), in adult respiratory distress syndrome, 728

Potassium, in nutritional support, 32-33

Prealbumin, 9, 11

Preeclampsia, disseminated intravascular coagulation and, 483

in coagulopathy of pregnancy, 483 pathophysiology of, 475-478

Pregnancy, antithrombin III deficiency in, 505-506 coagulopathies of, 475-487

HELLP syndrome in, 475-481

preeclampsia in, pathophysiology of, 475-478

Procainamide, in resuscitation, 254, 256

Prostaglandins, endogenous, in stress ulceration, 165 exogenous, for stress ulceration, 167-168

Protein, circulating, 8

in hypermetabolism, in refeeding, 102

metabolism of, 98-100

intake of, in dialysis patient, 88–89 in end-stage renal disease, 86–87, 91

levels, in hypermetabolism, 99-100

malnutrition and, 2-3

requirement for, in cardiopulmonary disease, 59-61 in children, 68

in pancreatobiliary disease, 37-38 retinol-binding, 10-11

Protein C, deficiency of, congenital, 451

in venous thrombosis, 507

Protein C system, in coagulation inhibition, 396-397

Protein S, deficiency of, congenital, 451 in venous thrombosis, 507

Protein S system, in coagulation inhibition, 396–397 P&T (pharmacy and therapeutics) committee, 380, 382

PTC (partial thromboplastin component deficiency). See Hemophilia(s), factor IX deficiency.

Pulmonary embolism, diagnosis of, 491-493

embolectomy for, 495 formation of, 491

pharmacotherapy for, 494 prevention of, 492, 494, 496

signs and symptoms of, 492

vena caval interruption for, 494-495 Pulsatile pump (ABIOMED BVS-5000 system), 653-654

Purpura, thrombocytopenic, in pregnancy, 484 transfusion-induced, 552

Quality of life, after cardiac transplantation, 666-668 feelings toward donors, 667 psychiatric factors in, 667-668 return to work, 666 versus non-cardiac transplantation, 668 conceptual frameworks of, 662 definitions of, 661-662 in chronic heart failure, 661-670 measurements of, instruments for, 663-664

issues in, 662-663 outcome, in heart failure, 664-666 in patients with heart assist devices, 666

research in, future, 668-669

Ranson criteria, 38, 40

in pancreatitis, acute, prognostic, 196 Red blood cells, transfusion of, acute hemolysis

following, 550 administration in, 546, 552

storage and handling for, 545-546, 552

REE (resting-energy expenditure), 10-13 Reflux, esophageal, postesophagogastrectomy, 182-183

Relaxation, in pain management, 719 Renal disease, coagulopathies from, 457-458

Renal failure. See also Dialysis; Transplantation, kidney. acute, 81, 84

after bone marrow transplantation, 549 dialysis for, 87-88

Renal failure (Continued) nutritional issues in, 88-90, 92-93 in fulminant hepatic failure, 145, 149 kidney function and, 79-81 nutritional support in, 79-96 consequences of, 82-84, 91-92 for at-home care, 92 for dialysis patient, 88-90, 92-93 for hospitalization, 93 goals in, 92 in end-stage renal disease, 81-83, 85-87 instruction for, 92 posttransplantation, 90-92 problems in, common, 93-94 transplantation for, nutritional issues in, 90-92 Renal insufficiency, after cardiac transplantation, 645-646 Renal system, in disseminated intravascular coagulation, 401-402 Rendu-Osler-Weber disease, 445

Reperfusion injury, coagulation and inflammation in, 421–423 definition of, 421

pathophysiology of, 422-424

Respiratory function, treatment outcomes management and, continuum of care in, 744

emergency department and, 747-748 Respiratory insufficiency, after cardiac transplantation,

Respiratory system, senescence of, 737-738 Resting-energy expenditure (REE), 12-13

Resuscitation, fluids in, 196

pharmacotherapy in, administration routes in, 248-250 cardiopulmonary resuscitation and, 250-255 for bradyarrhythmias, 257-258 for ventricular arrhythmias, 256-257 objectives of, 247-248 outcomes and, 247-259 success of, predictors of, 250 vasoactive drugs in, 250-252

Revascularization, myocardial. See Coronary artery bypass grafting (CABG).

Ribonucleic acid, in enteral nutrition, 26-27

Salicylates, 289, 291 vitamin K deficiency from, 456 SCD. See Sudden cardiac death (SCD). Sclerotherapy, endoscopic injection, for esophageal varices, bleeding, 155, 159

SDC. See Serum drug concentration (SDC). Seizures. See also Status epilepticus. anticonvulsant agents for, 238-239

management of, 240 pathophysiology of, 237-238 Sepsis, antithrombin III in, 504

in fulminant hepatic failure, 149 in pancreatitis, acute, 193-194

Seroma, postoperative, in cardiomyoplasty, 632 Serum drug concentration (SDC), elimination and, 230-

interpretation of, 231-232 responses to, 227-228 samples for, interpretation of, 231–232 timing of, 232–234 steady state and, 231 therapeutic range of, 229 tissue concentration and, 227-228

Shock, cardiogenic, fulminant hepatic failure from, 143

septic, antitumor necrosis factor for, 338 clinical signs of, 345-347 colony stimulating factors for, 334-335 corticosteroids for, 335 hyperdynamic response in, 346 hypodynamic phase in, 346-347 immunotherapy for, 335-337, 347-350, 354. See also Antiendotoxin therapy. incidence of, 345 interleukin-1 receptor antagonists for, 338-339 management of, conventional, 334, 347 mortality from, 333–334, 345 opioid antagonists for, 339 pathophysiology of, 345-346

Short gut syndrome, causes of, 103-104 small intestine transplantation for, 203-213 Shunts, for esophageal varices, portacaval, 160

splenorenal, distal, 159-160

Skin, in disseminated intravascular coagulation, 402 Small intestine, transplantation of, 203-213 complications of, 210-211

criteria for, 103 donor in, 204 graft monitoring following, 209-210 graft-versus-host disease and, 211-212 immunosuppression following, 206-207, 212 indications for, 103

infection following, 212 intensive care following, 207 nutrition following, 210 outpatient care following, 208

patient teaching following, 208-209 procedure for, 205-206 psychosocial issues following, 212-213

recipient of, 204-205 rejection of, 211

surgical unit care following, 208 Sodium, in nutritional support, 31-32 SOLVD (Studies of Left Ventricular Dysfunction).

angiotensin-converting enzyme inhibition and, 602-603 Sonoclot, 468

SRMD. See Stress-related mucosal damage (SRMD). Stab wounds, to chest, 691

Stanozolol, for lipoprotein(a) reduction, 441-442 Starvation, assessment for, 1-2 stress response in, in children, 69-70

Stasis, deep venous thrombosis and, 489-490 Status epilepticus, anticonvulsant therapy for, 238-239 definition of, 237-238

management of, 240-241 Stomach, trauma to, 133

Streptase. See Streptokinase (Kabikinase; Streptase). Streptokinase (Kabikinase; Streptase), 359-360

Stress-related mucosal damage (SRMD), antacids for, 326-327

histamine-2 antagonists for, adverse effects of, 329 drug interactions with, 329 studies of, 327-329

vs. sucralfate, 330 mortality from, 325-326 pathophysiology of, 325-326 prophylaxis of, antacids in, 326-327

histamine-2 antagonists in, 327-329 pneumonia from, nosocomial, 330

sucralfate in, 329-330 risk for, 326

Stress response, assessment of, in hypermetabolism, 100-

in diabetes, during critical illness, 49-50

metabolic, in diabetic patient, 49-50 starvation and, in children, 69-70

Stress ulceration, 163-169. See also Stress-related mucosal damage (SRMD).

bleeding in, management of, 168-169

definition of, 163 diagnosis of, 165-167 differential, 165

goals in, 165 risk factors in, 165

factors in, aggressive, 164

epithelial regeneration, 164-165

mucosal, 164

mucus secretion, 164

prostaglandins, endogenous, 165 histamine-2 antagonists for, 325-331

mucosa in, defensive mechanisms in, 168

pH in, control of, 167-168 monitoring of, 165-167

Stroke, ischemic, atherosclerotic, 525 classification of, 525-526

incidence of, 525 thrombotic, 525

Studies of Left Ventricular Dysfunction (SOLVD), angiotensin-converting enzyme inhibition in, 602-603

Succinylcholine (Anectine), 301-302 in trauma anesthesia, 706-707

Sucking chest wounds. See Pneumothorax, communicating.

Sucralfate, for stress ulceration, 168

Sudden cardiac death (SCD), from chronic heart failure. 609-617

etiology of, 609-611

autonomic nervous system in, 610-611 ventricular dysrhythmias in, 609-610

incidence of, 609-610

markers or triggers of, atrial fibrillation, 611-612

heart rate variability, 612-614 morning hours, 611-612

syncope, 612

prevention of, antidysrhythmic devices for, 615 cardiopulmonary resuscitation training for, 615 education in, 615 heart transplantation for, 613, 615

pharmacologic, 613

with left ventricular dysfunction, 625

Syncope, in chronic heart failure, sudden cardiac death from, 612

Systemic inflammatory response syndrome, assessment of, 425

Systolic failure, in congestive heart failure, intravenous therapy for, 263-266

titration to oral, 264-266 oral agents for, 266-267 pathology of, 261-262

Taurine, in enteral nutrition, 27-28 TEE. See Transesophageal echocardiography (TEE).

Telangiectasia, hereditary hemorrhagic, 445 TENS (transcutaneous electrical nerve stimulation), 719

Therapeutic drug monitoring, common drugs in, 229

indications for, 229 recommendations for, 232-233 steady state in, 231-232

therapeutic range in, 227-228

Thoracic trauma, adult respiratory distress syndrome following, 723-734

anesthesia and, 697-711

blunt, 673-686

00-

in elderly, 735-740. See also Elderly, chest trauma in.

outcomes model for, 741-755 pain management in, 713-722

penetrating, 687-696

Thoracic tube, in pleural space injuries, 678-679

Thrombectomy, for mesenteric ischemia, 174-175 Thrombin, inhibition of, 397

by antithrombin III, 499-500

production of, in clotting cascade, 394-395

Thrombocytopenia, heparin-associated, 520-521

in pregnancy, 483-484 etiology of, 483-484 management of, 484

pathophysiology of, 484

Thromboelastography, 468
Thromboembolisms. See also Pulmonary embolism; Thrombosis, deep venous.

diagnosis of, 491-492 etiology of, 489-490

antithrombin III deficiency, 502-503

implantation of ventricular assist devices, 657

treatment of, 503 incidence of, 489

Thrombolysis, agents for, 512. See also named agent, e.g. Alteplase

adverse effects of, 365 alteplase, 362, 364-365 streptokinase, 359-360 urokinase, 360-363

bleeding following, 512-513

interventions for, at vascular site, 513-514

risk factors for, 516

cerebral infarction following, 515-516

contraindications to, 359, 514-515 cost of, 380

endogenous, 356

exogenous, 356-357 rationale for, 357-358

indications for, acute myocardial infarction, 511

studies of, 358-359 mesenteric ischemia, 174 occlusive disorders, 359 pulmonary thrombosis, 494

hemorrhage following, intracerebral, 515 intracranial, 514, 516–517

subarachnoid, 515-516

neurologic complications of, 514-517 Thrombophilia, hereditary, 501-503

Thrombosis, arterial, lipoprotein(a) in, 435-443. See also Lipoprotein(a); Lipoprotein(s).

assessment of, 425-426

atherosclerotic, 525 deep venous, embolization in, 490-491

etiology of, 489-490 prevention of, 494

thrombus formation in, 490

venography in, contrast, 492

in disseminated intravascular coagulation, 399-400 venous, antithrombin III deficiency in, 499-509. See also Antithrombin III, deficiency of.

Thunder Project. See also Cannulation, arterial.

data collection procedure in, 557-558 objective of, 557 observations from, 559-560

Tissue plasminogen activator (TPA). See Alteplase (recombinant tissue plasminogen activator [r-TPA]).

Total artificial heart, 658

Total lymphocyte count, 10, 12

Total parenteral nutrition (TPN), diabetes and, 51-52 drug compatibility with, 35

Total parenteral nutrition (TPN) (Continued) electrolyte salt forms in, 31-32 for children, 70 devices for, 67 formulation of, 72 for diabetic patient, administration of, 51 components of, 51 hyperglycemia from, 51-52 insulin and, 53-54 nursing considerations and, 55 in pancreatitis, 40, 198 magnesium in, 33

Toxicity(ies), neurologic, after bone marrow transplantation, 540

renal, from aminoglucosides, 373-374 from antithrombin III, 504

Tracheobronchial tree, blunt injuries to, airway management in, 680 monitoring of, 680-681 tears and rupture, 679-680

Tranexamic acid, for coagulopathy, postoperative, 469-

Transcutaneous electrical nerve stimulation (TENS), for pain, 719

Transdermal system, for analgesia, 293

Transesophageal echocardiography (TEE), in thoracic trauma, 675

Transferrin, serum, 9, 11

Transfusion, assessment for, 552-553

complications from, 408 disease transmission via, 551-552

indications for, 544

of cryoprecipitate, 548-549 of factor concentrates, 548, 555

of fresh frozen plasma, 547-548, 554 of granulocytes, 549-550, 555

of platelets, 468-469, 546-547, 555

of red blood cells, 545-546 of whole blood, 545

patient education for, 553

personnel coordination in, 553 reactions to, allergic, 551

endotoxin, 552

graft-versus-host disease, 551 hemolytic, acute, 550

delayed, 551 nonhemolytic, febrile, 550-551

therapeutic, history of, 543 Transplantation, bone marrow, 531-542

cardiac, 635-648

kidney, nutritional issues in, 90-92 liver, for esophageal varices, 161 for fulminant hepatic failure, 149-150

for pancreatobiliary disease, 42-43 reperfusion injury following, 424

small intestine, 203-213 Trauma, thoracic, 671-755

adult respiratory distress syndrome and, 723-734 anesthesia in, 697-711

blunt, 673-686 in elderly, 735-740

outcomes management model for, 741-755

pain management in, 713-722 penetrating, 687-696

Trauma outcomes management model, 741-755 continuum of care and, 743-747

airway parameters and defining characteristics in,

cardiovascular function in, 745 respiratory function in, 744

critical care unit guides, 746, 749, 752

advantages of, 749-750 design factors in, 742-743

emergency department guides in, 746-749

for cardiovascular function, 749-750 for respiratory function, 747-748

patient similarities and differences in, 742-743

Triceps skinfold thickness, 7

Tube feedings. See Enteral nutrition.

Tumor necrosis factor (TNF), in coagulation and inflammation, 417

Urokinase (Abbokinase), for acute myocardial infarction,

for peripheral arterial occlusion, dosage of, 360, 362 infusion of, coaxial method in, 360-361 pump set-up for, 360, 363 reconstitution of, 362

Valium. See Diazepam (Valium).

Valproate, for seizures, 239

Valproic acid, for seizures, 239

Vasoconstriction, in hemostasis, 453, 459

Vasodilator(s), direct-acting, arterial, 578 calcium channel blockers, 579-580

non-calcium channel-dependent, 578-589

balanced venous/arterial, 580

combination therapy, 580-581

effects of, 576-577

neurohumoral system and, 576-577

venodilators, 578

for congestive heart failure, acute, 263

for chronic heart failure, 578-581

Vasopressin, for esophageal varices, bleeding, 155, 159

VATS. See Video-assisted thoracic surgery (VATS).

Vecuronium, 303

Vena caval interruption, for pulmonary thrombosis, 494-495

Ventilation, in flail chest injury, 674

in pulmonary injury, 675

mechanical, aerosol therapy with, 271-280 neuromuscular blocking agents in, 297, 299

Ventricular arrhythmias, pharmacotherapy for, in resuscitation, 256-25

Ventricular assist device(s) (VADs), 649-659

characteristics of, 649 indications for, 650

intermediate, 653-656

comparison of, 655

HeartMate 1000 LVAD, 655-656

Novacor, 653-655

permanent, total artificial heart, 658

post-implant considerations, 656-658

quality of life with, 666

short-term, centrifugal pumps, 650-651

extracorporeal membrane oxygenation system, 651-

pulsatile pump, 653-654

Ventricular dysrhythmias, sudden cardiac death from, 609-610

Verapamil, in congestive heart failure, acute, 268 in pediatric patient, 373

Versed. See Midazolam (Versed).

Very low-density lipoproteins (VLDLs), 436-437

Veterans Administration Cooperative studies, of combination therapies, for chronic heart failure,

Video-assisted thoracic surgery (VATS), in emergency room, 692

room, 692
Visual analogue scales, for pain, 716
Vitamin K, deficiency of, coagulopathies from, 455–456
in enteral formulas, 4–5
VLDLs. See Very low-density lipoproteins (VLDLs).
von Willebrand disease, coagulopathies in, 446–447
treatment of, cryoprecipitate in, 549

von Willebrand syndrome, in pregnancy, 484-485

Warfarin, bleeding with, 517–518 evaluation of, 519 patient education in, 518–519 risk for, 517–519 characteristics of, 517 drug interactions with, 518 uses of, 517